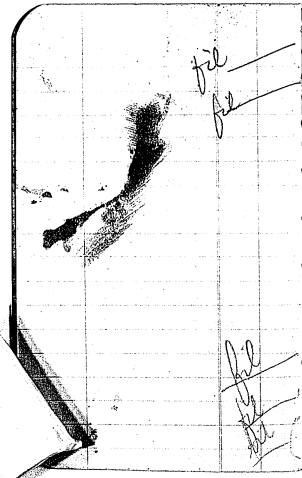
Notebook, PN-88-04-13

This pocket notebook was used by Edison for notes on chemical and electric lighting experiments. The only dated entry, near the end of the book, is for April 13, 1888. Most of the chemical experiments relate to insulation or to phonograph cylinders. The pages are unnumbered. Approximately 40 pages have been used.

Imabenzle – m.p. 140 soluble in glutinous mass, destroyed by dilute gases nitrous or carbonic monoxide.
Try for insulation.

Tripotassamine – NK_3
How this for N residual or obtaining K in a vacuum tube. Tertiary amine –

for Solvents of Molecular weight –
Trimethylamine – Trimethylamine
Methyldiethylamine
Methylethylpropylamine
all powerful alkalis & replace Ammonia from its salts – Try Cyanide of Ammonia & other Cyanides as Solvent.



Insulation Experiments

Uric acid - Dont melt, Carbonizes with difficulty scarcely anything goes off, Coales together.

Arrianitic, 2 mol H_2O, Carbonizes to charcoal with little fusion, very little goes off

Azodiamido-Benzol Hydrochlorate
Melts, puffs up like Sulph Cy Hg. very little flame, very large charcoal residual.

Acid Rosolic - puffs greatly - little flame non-crystalline,

Acid Copaivic - melts very easy, burns without residue. - Melted butter soft. combustible threads - glassy -

Acid Cummic - Melts fairly easy - both puffs. scarcely anything comes off or flame

Amido azobenzol HCl chlorate - puffs - nearly all Charcoal

Picric acid - to oxidize finished off -

Tartrate Ammonia - leaves nearly all charcoal - Dont melt,

Uric Ammonia - Dont melt - Carbonizes & keeps shape - no flame whatever - good for insulation of insoluble in water - non-crystalline -

Ammonia Succinic - Melts leaves greatly no charcoal residual. but black stiff left stands red heat & is still sticky - very little flame - butter melted under Kopp - higher heat black stuff -

Casein – cheese – semi melt, puffs – gives large quantity puffy charcoal thought do for insulation of inside cylinders –

Chrysanilin – melts very little ~~charcoal~~ nearly all charcoal puffs –

Sulphocarbolate of Zinc puffs but melt blackens – shiny –

Iodide Palladium melts red heat to transparent enamel somewhat flexible + can be cut with knife –

Hg-oxalic evaporates quickly all away ditto Cerulately –

Nat'rium Lacto-phosph little balls – very tough viscous like, but still solid on surfaces of balls – yet does not seem to fuse mass.

Nat'rium – Boro-Benzoic – softens & puffs in small balls – means could probably be fused to coherent mass but cannot with air –

Nat'rium Butyric melts to liquid viscous Mass soapy strong –

Nat'rium Benzoic same as above

Trypsin – nearly all charcoal

Sl'ammium phlorothlor melts to dark viscous bottles mass. see about it.

Tetrahydrat. Boric all away – but when pound for bottom viscous stuff mass drawn into threads –

Aniline gray dont Melt seems be all charcoal – ditto Blue Ethyl – do Black Sol Brown – nearly all charcoal – each particle softens to globule – Try all the Aniline for insulation that are used in H_2O –

The true method of obtaining a proper non combustible insulation is the formation of such compounds as ~~[illegible]~~ melaglic acid, chlorine passed through gelatin + dissolving them in Ammonia or a cheap amine –

Chlorine passed thro gelatin makes whole elastic tough insol stuff – Sol in alkali probably chloramin or an amine will do it –

Have Deems go through all the reactions of gluten in Wattle –

Pentachloride of phosphorus formed with Guairatic acid a tenacious reaming mass
Watts 949 – G

Casein solution C is precip by all Earthy & metallic salts
See Watts 811 – Dreams to work on it –

an astonishingly tenacious glue is made by dissolving 1 pt Carbolic acid in 4 pts water in 4 pts Cook bone & adding 2 pts shellac when solution is complete when heating whole in vm water – Watts 739

Camphor triturated with powdered Copal causes it stick together – Alcohol & Camphor excellent solvent

Monobromide Copper
dark brown mass Insol
H_2O –
Nitrid o Cu – 6 all Cu with 6 grove cells coated to P. Arp in long battery trough with Sol ammonia
+ plat plate for neg nitride
in back of neg with side

I believe Chloride Lead can by manipulation be got into a soft shape – perhaps it can be alloyed with Sulphur Lead, Asphaltene, etc or by cooling efficient warm or pulling the original Chloride from the reactions – This would be the finest insulation –

Ferricyanide K precips Tin – Compound in gelatine precip

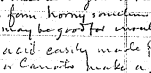
How would it do to use Copper in Satt Sol of gelatine & Water – Chlorine on it this would form the white plastic compound to coat wire + afterwards dry it –

in glass panning Copper & with Rubber ride free
Vanner see if as good

Pectin to Pectic acid
pyropectic acid - black
sieb mucil #20 sal alkaline
Lepinois - $C_{14}H_{18}O_9$ -
has same formula as pectic acid
of Fremy? what is this -
perhaps there is a group of metapectic
Pectates from horny mucilaw fibrous
gelatin - may be good for circulation
Pectic acid easily made from
Turnips in Canada hunks in Lot.

Supposed when heated with ammonia
gives bright from compounds like
Agelatine (which are precipitated
by alcohol as tenacious threads
See Watts 467 Vol V

Work up the Urine Compounds



Wax mucil: made by
prolonging soft wax of
pineapple substance

with polished die - Then pouring
in shallow horseshoe sat Gum
Apl Metagalic acid + Lat
dry - material shrinks (as such
mills allow of not stretching in
least - perhaps alcohol
indentations can be [illegible]

Lasylic acid $C_7H_4O_2$
Watts 471 Vol 3

Ledixanthin: $C_7H_6O_3$
Sal alkali - Watts - 567
Vol 3

Rubber like bruised in sal in
large quantity. Turpentine
is deposited unchanged - perhaps
by evaporating down at low
temp get thick + Have Marshall
try

See how Urine Carbonyes

Luteolin $C_{20}H_{10}O_6$
Watts. Vol 3 736 – good
sol ammonia & like mating

Gets some Mordder Colors
also conc Extracts dif
sub in Mordder

Methylamine can be made by
action of Nascent H on Hy dicyanic
acid – the ~~oxalate~~ of Electricity
plat in Hy C. sol make it by
Electrolysis –

~~Morin C H 14 10 7~~
good – Watts III, 1047
~~Algarin C H O 10 6 3~~

Ammoniacal Murexistin
Watts 1062 Vol II
good

Gentisin C H O
$14\ 10\ 5$
Pyrogentisic acid $C_6H_6O_2$
Gentisic acid – $C_7H_6O_4$

Perchloromesoxal
mod water
C_4Cl_6 – melts 390
Iron might be Elegant
Insulation – Watts 3rd
Sup 1506 –

Perchlorethane Cl_3CCCl_3
mp 179
See if these Chlorine Carbon
Compounds are stable &
not volatile also crazy

pyvuril decomp without
fusion – sol alkali
ammonia 3rd Sup 1720

Homopyrralene acted on by HCl forms a soft resin – 3rd Sup Watts 1730

Quinone – $C_6H_4O_2$
= C_6H_4
Tetrabromoquinone
$C_6Br_4O_2$ Watts
3rd Sup 1741

Quinyl Oxide
white amorp prod
soften at 100°
Watts 3rd 1742

Silicic Phenyltrichloride
dissolve alcohol or benzene
in glassy prism like
Plunge amorp on heating
gives off slight combust
vapors + leaves residue
not melted at which
heat = Watts 3rd Sup 1793

Silk dissolves in ammoniac
glycerin Cop solution
precip as jelly by HCl
Cu sal to prep by dissolving
16 grms pure crystallized
Cupric Sul in 140–160
g water then adding 8 to 10
grams pure glycerin
spec grav 1.24 & drops
in Sodium hydroxide until Cu
precip – dissolved

Chlorobromo cod. de
Silver can be Count
Cold angle 40. - 3rd Sup
1801

Arnold Melagalec. work
for champs mixed with phgo
+ pacing Lamptheck - Lindsley
Lamptheck (B) Carbonyl

Hexabromobenzene
C_6Br_6 Mp aft 300°
@ 315

~~Hexachlorobenzene~~
~~C_6Cl_6~~

octochloronaphthalene
$C_{10}Cl_8$ - 203

$C_6H_4O_2$
Phosmic acid mp 60
Collinic acid 100
Quinone 100

Homoitaconic acid
$C_6H_8O_4$ mp 170

Salicylide $C_7H_4O_2$
decomp 220

Furfuracrylic acid
$C_7H_6O_3$ mp 135

Terebilenic acid
$C_7H_8O_4$ 169 mp

Hydrofuronic acid
$C_7H_{10}O_5$

Quinic acid $C_7H_{12}O_6$
155 mp

Phenylglyoxylic acid
$C_8H_6O_3$ – mp 170

Methoxyhydroxybenzoic acid Isovanillic –
$C_8H_8O_4$ mp a 245

Bergenital $C_8H_{10}O_5$
mp 183

Propylethenyltricarboxylic acid $C_8H_{12}O_6$ 148

Hydroxymethylene
$C_9H_6O_3$ 145

Coumarilic acid do 190
Umbelliferone do 225
Bergapten do 206

Benzoglycollic acid
$C_9H_8O_4$ 120

Toluene-dicarboxylic acid
c " $C_9H_8O_4$ 258

To-Uvitic " 270

To-Xylidic
Beta B 320
Isoxylidic 315

Ethylic gallate, $C_9H_{10}O_5$
141

Oxycamphoronic acid
$C_9H_{12}O_6$ 210

Ethylic Carbodiglycollate
$C_9H_{14}O_7$ Liquid
perhaps has a residue at
decomp 280

Furoin $C_{10}H_8O_4$ 135

phenylfumaric a " 161

Benzalmalonic acid 195

Cumamo-Carbonic acid 173

Benzhydrylacetcarbonic " 150
" " anhydride 150

Methylene Caffeic acid 232

Methoxyhydroxycoumarin 184

Tetrahydroxynaphthalene 226

Novelties typing phoms Cy

Butter antimony - m.p. 72°
Stannic chloride m.p. 112
Tribromide antimony m.p. 94 BP 270
Triiodide arsenic " 146
Arsenic trisulphide Early fused
Orpiment - Realgar -
Mercuric phosphochloride
Chlorophosphide Mercury
IV wells 5:17 III-91

Iodoforms -
Oxychloride Antimony m.p. 85
Phosphorus - Oxybromide 45
Sodium Metaborate 57
glycerol phos acid
Glycerino acid
Arsenic acid
Residue Fuscine acid

Rian of above as Isac
Catechu
Dammar
use Balsam Tolu - Copaiba
Styrax - Balsam Peru
Vinco Impetin Stroldehydrates
How wld Taro mixed with
Carnauba alone answer
Balsam Tolu
Gum Thus as coflants
Amorphous phosphorus
Gum de Prussian
Turpentine
Naphthalene or Pyrene
Use Gamboge as a boro
Toxiflow d by other agents

Boro-wolframic Cadmium
added to block cylinder
etc heavy is may make
my burning tool of
Quartz Corundum
and of metals as some
dont electrify or
charge opposite & stuff
will fly away
What is wanted is
something that will break
with a shrewy vibration
fracture - perhaps some
of the Resins - might
work as a base -

Perhaps gum Dextrin
could be used as a base
or Arabic & be softened
by something soluble in Water
Shellac Glucose Gum Gum
potato, Caramel,
glucose Molasses like the
back of books -
Glue caramel & Arabic
Soluble starch glucose
or Caramel - also with
glue -
Slant Gladstone or
glue Arabic bases
other shiny resins
Dammar & Tolu - Pem
Copaiba etc as softeners.
Liq Styrax -

If the cylinder could be
turned off with a piece of
steel it could not electrify
as two electrify by sublimation
of some volume of it &
How would hard dithiocetic acid
or something like it –

Melassic Acid a
jet black acid from
treating glucose with
Caustic alkalis
See Watts 3. 868.

Try Carbolic acid.
to stop electrification
also Creosote
$C_2H_5NO_2$

Glycocine Watts 2nd
902 – Made by
adding in Gelatine by
Caustic Potash or
Cresolsulne, Crystals
Brown + 150 Carbonyl
at 170 – good

Sexachlorocamphor
$C_{10}H_{10}Cl_6O$ – Watts
1 – 728 – 100 wax

Try Camphor in Cannabis

Carnauba
Try Chrysen, Pyrene
Petroleum Wax, Camphor
Iodine, - Creosote,
Venice Turpentine
Naphthalene, Carbolic
Soda pure, Asphalt Oil
Rosin oil, Oil Camphor
Glycerine pure ~~Barley Dixie~~
Chloride Carbon
Chloral Hydrate
Formic Acid,
Chloride Zinc
Cyanide Potassium
Ammonia - Pyridine,

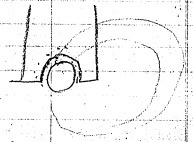
Gilliac acid Benzoic
Acid - Turpentine,
also try 10 pct of
Paraffine, Ceresine white
Wax, Japan wax, Cocoa butter
Lard, Tallow, ! also the
aniline Dyes - Lard
Sperm Linseed ~~oil~~
Camline + other oils
See if Copal Zanzibar
will mix - also
try other gums Dammar
etc - Try the Varnishes
we have & also 10 pct
block Ceresine to make
it mixed well -
Bone Oil -

See Batch about
a chamber + boiler
for Superheated steam
to 750 deg fahr for
Clay process — see 38
Arrange how take out
those fds — + put in
tube + chamber follow
1/2 doz 1/4 x 1/4 6 inch
pine — Some 8/1000 Reg
fds — 2 pine sticks
1/32 thick 1 inch wide
6 long — Some kerosene
fds —

~~perhaps are~~

See if can get a steam
gauge that will
stand — 81 atmosphere

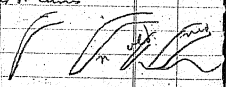
Calculate the space
so that all the water will
be steam (370.1) at 50



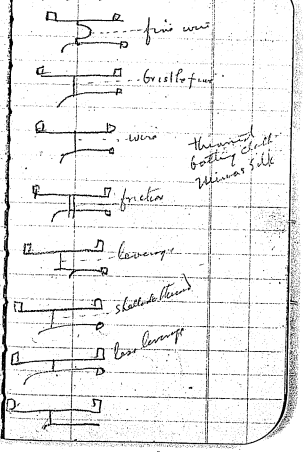
Kennelly to get a
knife on moving wire
through movable line
force in cloud transformer

Put Gladstone on
Blebbing tobacco

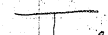
New Idea good
Speed phono not less
than 80 instead 60
then instead of using
Knife Edge recovery to
scrape ridges or fall into
Cracks + thus make scratch
use a flat footed point
which will smooth feathers
Edges - not fall into cracks
made by tearing wax &
also allow greater pressure
to put on wax + also
smooth record + reproduce
greater no lines



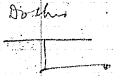
Recovery



Instead of

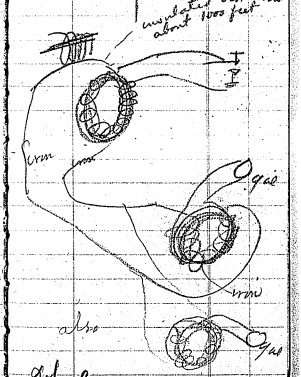


Do this



April 13 88 –
Marshall –
Put 10 Reg lamps in
hot Linseed a set at
low red + see how long
takes – This is new –

Kennelly

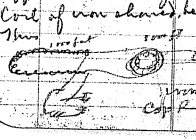


John Can say up
a wonder –

A coil of insulated iron wire wound at right angles with Copper insulated wire or energizing Coil might give a high electric emf - & there obtained thro transmitter Ether to another similar Coil

or a coil of insulated Copper wire wound at right angles should give a big effect by Conduction the stress -

But perhaps to get best effect entire length of Coil of iron should be screwed thru



Ozonite paper dipped in linseed oil by hand or at Hatz machine

Work up Ozone bleaching system with electrical Clement machine & transformers -

Make a false shell for phono to slip over my cylinder so surface will be slippy. Then prepare some wax thin paper shells & Coat wax for cheap market. See if can get it very flexible.

also try market in false shell of binding flat waxed paper sheets and [illegible] by hot tools etc

split the wax tube + put gum shellac or some other solution on cylinder see if ok – this would be good for shaving phonograms

See if Reg wax can all be dissolved or some other good compound in a volatile solvent so a false cylinder and phono can be coated by varnish good if can be done

Can an inside reamer be run over a phono cylinder wax in situ to turn shaving off + true, ask Otto

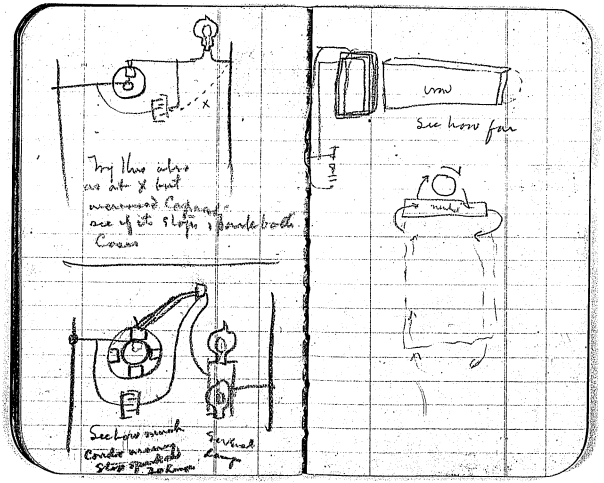
Can a knife revolved by hand with edge full length cylinder be used to turn cylinders in situ on phono –

Have wanted 120 mesh brass screen coated with shellac ready for Phonograph –

See Chronographs – dolescope Clockwork for phonographs also wheatstone also G & Stirch

as peroxide lead absorbs ozone perhaps Chem prepd Lead can be oxidized & used in lead storage battery try Holtzscherm on an plate prepared thus for storage –

Black Sulphide heads is turned white by ozone try for Chemleigh prepd plate grid


x
Try this also as at x but measure Cordage use of it stops Bowline both Crown
See how much
Cordage measure
Stop Bowline
Serval
See how far
rule

#514
Shelf 6
Box 3